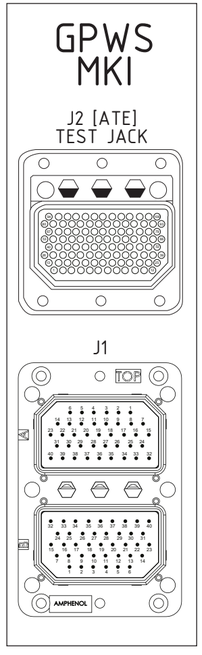
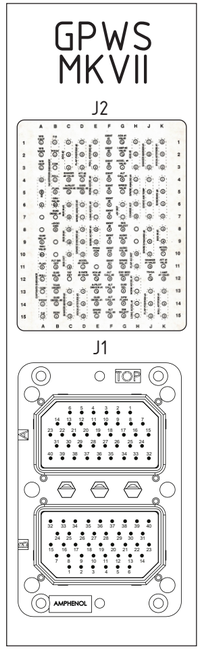




MKVII "Classic" Only:
To enable and select altitude callout options, one of the below pins must be grounded to either J2-E10 or J1A-26 (Program Pin Com):

J2-F12: Att Call Vocab #5
J2-F13: Att Call Vocab #4
J2-F14: Att Call Vocab #3
J2-F15: Att Call Vocab #2
J2-G04: Att Call Vocab #1?

*NOTE on Flap Override on MKI & MKVII GPWS:
-Unlike MKVI, Flap Override requires a latching switch, not a momentary switch.
-The +28VDC Landing Flap Discrete (J1A-24) was used instead of GND Discrete.
-To allow latching override switch to override Flap Toggle Switch, the latching switch must be installed in series on +28VDC side, before Flap Toggle switch!
-Unlike MKVI which resets any Flap Override, on the MKI/MKVII, manual deactivation of the latching override switch must be done before each flight.

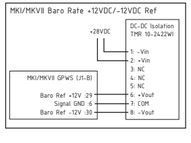
**NOTE DC Baro Rate on MKI & MKVII GPWS:
MKI & MKVII use same J1B-xx connections for DC Baro Rate, but each GPWS only requires some signals.

MKII:
-Requires both Ref Signals. (J1B-29 is connected to a +12VDC source, sharing the same GND as 115VAC (C). -12VDC Ref Sig must be floating and its Low potential not connected to PWS or Sig GND.
-Baro Rate Signal + is connected to a variable bipolar voltage source, with it's GND also connected to the 115VAC (C) ground.
-Pin J1A-07 "Baro rate wiring monitor" does not appear to be needed even for a valid Self Test. It can remain disconnected.

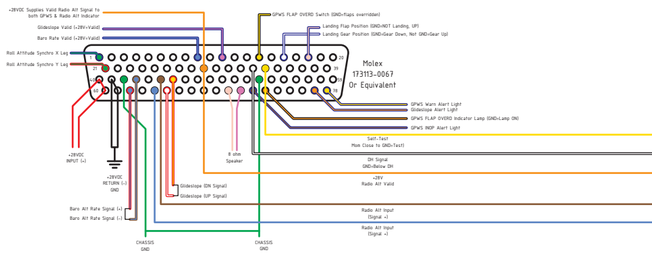
MKVII:
-Same connections as above although the MKVII doesn't require either Ref Signals, but they may remain connected. The MKVII doesn't care. Only the Baro Rate Signals (+ and -) matter.
-Pin J1A-07 "Baro rate wiring monitor" does not exist on the MKVII and this pin is used for another feature.
-Signal Scaling appears to be +/- 6VDC.
-For a MKVII only installation, you can see if your unit can get away with not using these references voltage inputs.

-TROUBLESHOOTING TIP: Occasionally the MKVII INOP Lamp will light for no apparent reason at power up, even though all required inputs and valid signals are present. This type of error is usually related to the Baro Rate Signal Input logic needing to be reset. This can be done by adjusting the Baro Rate Signal voltage input to about -3VDC (a large barometric rate drop) and then increasing the radio altitude input from 0ft AGL to above ~100ft AGL. The "DON'T SINK" aural alert should sound as altitude increases. After alert sounds, lower the radio altitude to 0ft AGL. The alert should stop and the Baro Rate logic should be reset and the INOP Lamp should go out. A power cycle of both the 115VAC/400HZ and/or the 28VDC power inputs to the MKVII may be needed.

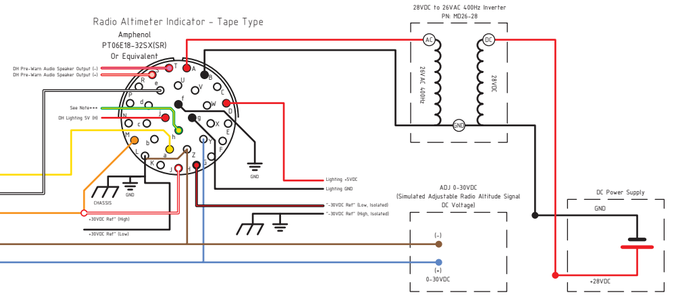
MKI/MKVII Baro Rate +12VDC/-12VDC Ref



MKVI GPWS (Classic Model)
P1 (FEMALE CONNECTOR, REAR SOLDER-SIDE VIEW)



Radio Altimeter Indicator - Tape Type



Wiring Guide: Sundstrand MKI & MKVII GPWS	Wiring Guide: Sundstrand MKVI GPWS
J1B-27	**9: Baro Rate Valid (+28V=Valid)**
J1B-26	**11: Glideslope Valid (+28V=Valid)**
J1B-24	**18: Landing Flap Position Switch (GND=NOT Landing, UP)**
J1B-34	15: Glideslope Cancel Switch (GND=Canceled, resets below 50ft AGL or above 1900ft AGL)
J1B-23	**16: Landing Gear Switch (GND=Gear Down, Not GND=Gear UP)**
J1B-19	29: Radio Altimeter Validity +28V input (+=13V=valid, <+4.4V=invalid)
(Not used on MKI) J1A-25	**33: DH GND input (GND=Below DH, Not GND=Above GH) [See Note]**
J1B-22	34: Self-Test (GND=Test Begin)
J1A-03	**20: ILS System Energize (GND=ILS System ON, recognizes Glideslope +/- inputs on pins 65,46)**
115/400Hz (H): J1B-03	**40,60: +28VDC INPUT (+)**
115/400Hz (L): J1B-04	**41,61: +28V RETURN (-)**
J1B-05	42,53: Chassis Ground
J2-E10 (MKVII Only) or J1A-26	Program Pin Common
J1B-06	Signal Ground
Baro rate wiring monitor (Used on MKI Only) J1A-07	---
DC Barorate #1: ARINC 575/595 (Sig+) J1B-28	***62: Baro Alt Rate (ADC Signal +, 500mVDC/1000FPM) [See Note]**
DC Barorate #1: ARINC 575/595 (Sig-) J1B-06	***43: Baro Alt Rate (ADC Signal -, DO NOT CONNECT THIS WIRE TO GND!) [See Note]**
DC Barorate #1: ARINC 575/595 (+12VDC Ref)** J1B-29	---
DC Barorate #1: ARINC 575/595 (-12VDC Ref)** J1B-30	---
	****63: Airspeed IN (ADC)**
	****44: Airspeed IN (ADC Signal Common)**
J1B-20	64: Radio Alt Signal ARINC 552 Input (Signal +)
J1B-21	45: Radio Alt Signal ARINC 552 Input (Signal -)
J1B-31	**65: Glideslope (UP Signal +/- 250mV=VALID) [See Note]**
J1B-32	**46: Glideslope (DN Signal +/- 250mV=VALID) [See Note]**
J1A-33	10: 8 Ohm Speaker, high level audio (+)
J1B-14	11: 8 Ohm Speaker, high level audio (-)
J1B-12	**72: GPWS INOP Alert Output, Amber (GND=Lamp ON)**
(+28VDC=flaps overridden use was used J1A-24+)----	**14: GPWS FLAP OVRD switch (GND=flaps overridden)**
GPWS Warning Lamp No. 2 (Used on MKI Only) J1B-09	**73: GPWS FLAP OVRD indicator light (GND=Lamp ON)**
(Not used on MKI) J1A-21	**76: G/S CANCLD Alert Output, Blue (GND=Lamp ON)**
J1B-33	**77: BELOW G/S Alert Output, Amber (GND=Lamp ON)**
GPWS Warning Lamp No. 1 J1B-11	**78: GPWS Warn Lamp Output, Red (GND=Lamp ON)**
(Not used on MKI) J2-K13	**1: Roll Attitude Synchro X Leg Input (Bank Angle Alert Input) [See Note]**
(Not used on MKI) J2-K14	**21: Roll Attitude Synchro Y Leg Input (Bank Angle Alert Input) [See Note]**
Roll Attitude Synchro Z Leg (Not used on MKI) J2-K15	---
Green=Not yet hooked up in my setup.	

*Note, regular diodes may be needed on the positive side of all indicator lamps otherwise voltage feedback into the GPWS may trigger false alarms during startup!
*Gear up or down will affect voice warnings depending on situation.
*Pin 33 accepts input from Radio Alt's DH output relay. E.g., when alt is below DH flag, alt relay is closed, shorting PIN 30 to GND indicating below DH condition to MKVI GPWS. "Below DH" alert is only selectable from 10-900ft and only when both flaps and gear are in landing condition.
*Pin pairs J1-40/J1-60 and J1-41/J1-61 are internally shorted together.
*Pins J1-42 & J1-53 are connected to ground
Internally. It is not necessary to tie them both to
Ground in the aircraft wiring. Pin J1-53 was made available to provide a convenient way to supply a
Ground to external equipment. If the OAT probe is not present, nothing needs to be tied to J1-53.
*Baro Alt Rate +/- Pins 62, 43 can be shorted together (no voltage input) to simulate valid Baro signal that will prevent Baro Rate Fail message during Self-Test.
*Glideslope +/- pins 65, 46 can be shorted together (no voltage input) to simulate valid GS signal that will prevent Glideslope Fail message during Self-Test.
*Pins 1, 21 inputs are from Gyro X/Y Axis Outputs. (I.e., Pins L,M respectively of Collins 329B Flight Director Indicator)
**+28VDC Baro Rate Valid Signal going into the MKVI is supplied by the Air Data Module and cannot support more than a few milliamp of current. Do not use this +28VDC signal from the Air Data Module (J1-E) for anything other than a direct connection to the MKVI J1-9! (This note does not apply if no Air Data Module is being used.)

Wiring Guide: Rockwell Collins 339H-6 & 339H-2 [See Note***] Radio Altimeter Indicator

M: Flag Alarm Voltage (+30VDC) Input. [See Note]
e,f: DH Output (Below DH=Relay Close GND, Above GH=Relay Open GND)
h: 339H-6 Model: Not connected. 339H-2 (Some Models): DH Indicator Lamp High Input [See Note*]**
a,b: Self-Test Button Output (Press=Closed Circuit)
A: 26VAC 400Hz INPUT
B: 26VAC 400Hz RETURN
Y: Radio Alt Signal ARINC 552 (Signal +)
Z: Radio Alt Signal ARINC 552 (Signal -)
L: Radio Alt Signal (Signal GND & Chassis Ground)
D: Lighting +5V (+)
g: Lighting +5V (-)

J: +30VDC Reference Signal [Must be precise +30.000V to achieve ARINC 552 spec.]
H: "-30VDC" Reference Signal [See Note]
J: 339H-6 Model: DH Indicator Lighting +5V AC or DC High Input. 339H-2 (Some Models): External Low Input/GND [See Note***]
S: DH Audio Pre-Warning Speaker Output (+)
T: DH Audio Pre-Warning Speaker Output (-)

* +30V Reference Signal MUST be precisely +30.000V. Any variation in the +30V Reference Signal will cause the indicator to read higher or lower than specification. -30V Reference signal variations seem to have no effect on accuracy, though as close to -30V is probably ideal. (Normally these precision + & -30V is supplied by the Radio Altimeter T/R unit.)
* The -30VDC Reference Signal CANNOT derive from reversed leads of the +30VDC Ref, otherwise a short will occur. While the "high" side of the -30VDC connects to the rest of the common grounds, the voltage source must be isolated from other power supplies!
* Flag Alarm Voltage does all the following: Lowers flag, checks validity of external +30VDC & -30VDC reference input, verifies presence of main 26VAC 400Hz power input, (and trips internal relay allowing Alt + & - signals to reach main control circuitry). If any ONE condition of the above is NOT met, then no Alt signals will register as valid--in this condition, tape will advance to "Off-Scale" and show black. (Upon all valid signals, tape will adjust to whatever corresponding ARINC 552 Alt signal is currently present, if any.)
*Unlike -30VDC Reference Signal, +30VDC Flag Alarm Voltage may obtained from +30VDC Reference Signal.
* Both +30VDC and -30VDC Reference Signals must be present to satisfy Alarm Flag condition noted above.
* Both +30VDC & -30VDC reference signals are very low draw (less than 20mA). As noted above, +30V Reference Signal must be exactly 30.000V for accurate indicator readings.
* Pin Z, L, must connect together, I.E., Signal Ground and Chassis Ground are shared, along with High side of isolated "-30VDC" Ref Signal. (This is to reduce noise and fluctuations in the Alt signal input.)
* DH Audio Pre-Warning output must be it's own speaker, not connected to MKVI's speaker output.
*Pin j, DH lamp high input can be either 5V AC or DC. NOTE, DH lamp has low side is internally wired to AC GND.

***Note Collins 339H-2 and 339H-6 have slightly different DH Lamp wiring.
DH Lamp voltage for both models may be either 5VDC or 5VAC, or 28VDC depending on part number. Before applying power to DH Lamp circuit, be sure of exact lamps installed in DH Lamp assembly!

The 339H-6 Model:
Decision Height (DH) lamp is powered (H) via pin J2-j. The ground or Low (L) side is internally connected to chassis (L). A separate ground connection is not needed. Pin J2-h is left disconnected on a 339H-6 model.

NOTE: For reference, a 339H-6 DH Lamp circuit described above is very similar to a 339H-2, CPN 522-4825-006 (Fig 13A, this PDF page 78).

339H-2 Model (-002, -004):
Decision Height (DH) lamp, unlike the -6 model, is powered (H) via J2-h and grounded (L) externally via J2-j. There is no internal connection to ground, lamp will not light without J2-j grounded.

Failure to take note of the above wiring difference before applying DH Lamp power may result in blow bulbs or shorts!! Verify Altitude Indicator model and its exact voltage requirements first.